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Louisiana CONSERVATIONIST

EARL K. LONG
Governor of Louisiana

RUDOLPH P. EASTERLY
Director

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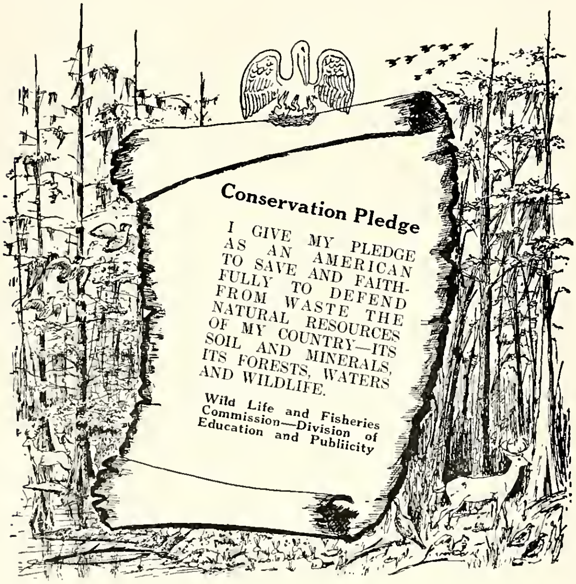
Conservation Pledge
I GIVE MY PLEDGE AS AN AMERICAN TO SAVE AND FAITHFULLY TO DEFEND FROM WASTE THE NATURAL RESOURCES OF MY COUNTRY—ITS SOIL AND MINERALS, ITS FORESTS, WATERS AND WILDLIFE.
Wild Life and Fisheries Commission—Division of Education and Publiicity

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Vol. 12, No. 1

EDITORIAL

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LOUISIANA
MOURNING DOVE HUNTER

—*photo by Joe Herring*

By Rudolph Easterly, *Director*
Louisiana Wild Life and Fisheries Commission

RUDOLPH EASTERLY

THE WORLD HAS lost at least one hundred and seven kinds of mammals since the time of Christ, and most, if not all, of these departed species and subspecies owe their extinction to man's activities, Lee M. Talbot, of the University of California, points out. Mr. Talbot should be in a position to talk authoritatively since he has recently completed a mission he undertook for the UNESCO-sponsored International Union for Conservation, in which he surveyed the status of the world's most threatened animal species.

"These same activities, today, have brought at least another six hundred forms to the point where they may be considered threatened with a similar fate," Talbot says.

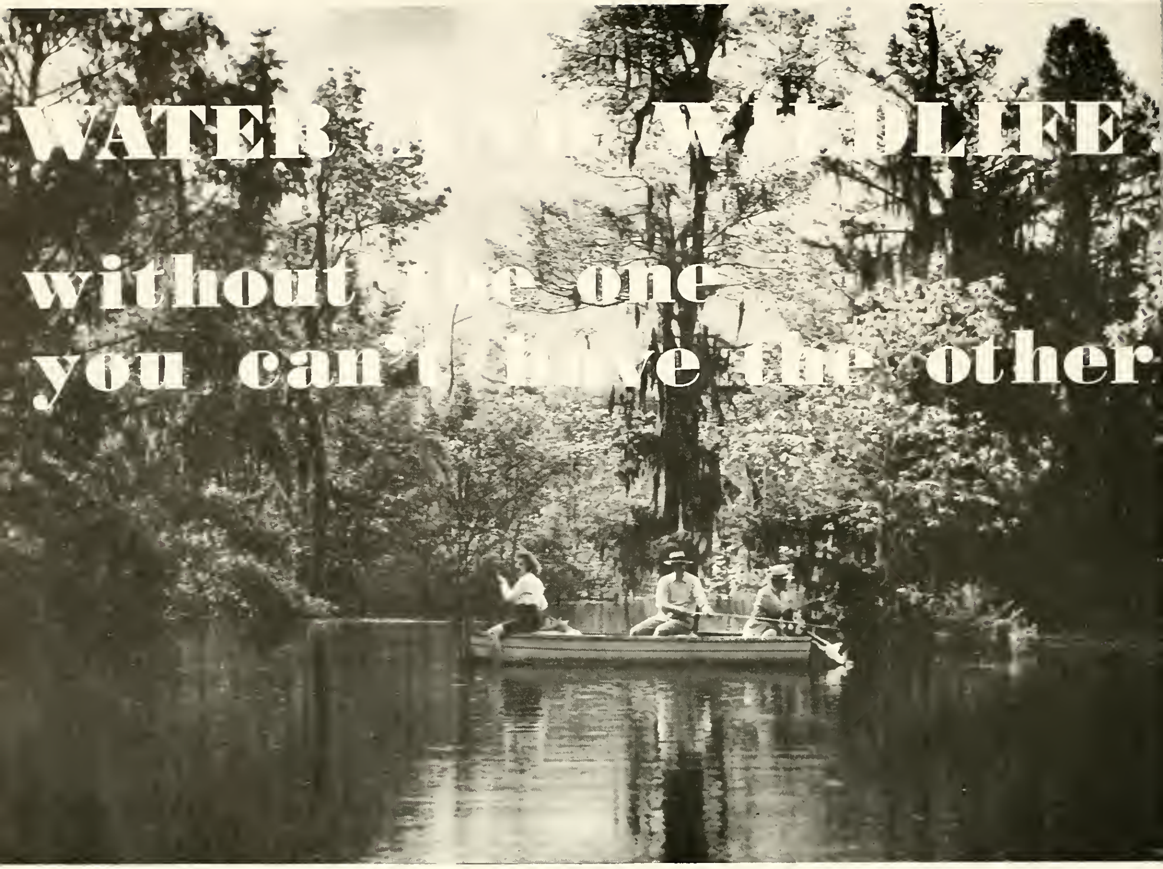
Perhaps at first thought a hundred extinctions spread over two thousand years does not seem a particularly urgent matter. The urgency becomes clear, however, when one considers that the rate of extermination—like the rate of the world's human population growth, with which it is closely associated—has sharply accelerated in recent years. Nearly seventy per cent of the losses have occurred in the last century and almost forty per cent within the last fifty years. Put another way, up to A.D. 1800, one kind of mammal was exterminated each fifty-five years; during the next century, the rate increased to one each year and half; and, since 1900, man has exterminated roughly one form every year! And the number refers only to mammals. No one has made a similar tally of reptiles, amphibians, fishes, or insects; but we do know that since 1689, when the last dodo is thought to have died, over a hundred other bird forms have been exterminated in one way or another.

Man accomplishes this destruction in two ways. The obvious way to destroy an animal is to kill it. Throughout history, mankind has hunted or trapped animals for the sake of animal products, for protection, to remove competition, and for sport. Less obvious than killing, but far more threatening to the species' survival, is habitat modification—indirect and often unintentional destruction. An animal does not exist by itself, isolated and independent. Rather, it might be considered as the center of a complex ecological web, whose radiating strands are the animal's requirements for or associations with food, water, cover, climate, disease, parasites, and predators. All these strands, in turn, are interconnected and make up, in sum, the animal's whole habitat. The animal's survival may depend on the web being intact.

A few human activities—such as cultivation, flooding, and tract construction—virtually annihilate entire habitat webs and the results are easy to see. Less easy to recognize are the effects of those human activities that alter only a part of existing habitats. Livestock-grazing, too, acts on the habitat web through direct competition for food and water, alteration of vegetation, erosion from overgrazing, and the introduction of parasites and diseases. Fire alters or destroys vegetation, soils, and watersheds. Accidentally (or even unintentionally) introduced exotic species compete with or prey on native species. Regardless of the form such habitat modification may take, it is an almost inevitable result of human activities; so much so that it is difficult to find any area of the earth's surface that has not been changed in some fashion by man. The extent and degree of this change are usually in direct proportion to the numbers of humans involved. Consequently, as the world's human population rapidly expands, animals with extensive or inflexible habitat needs are being literally squeezed out.

We, in Louisiana, are seeing these ecological changes going on under our very eyes, day by day, month by month, and year by year, yet so few people seem to care. When we ask for more funds to acquire more lands to halt this encroachment on our wildlife and our words fall upon deaf ears, one often wonders if the cause of conservation is not a cry in the wilderness.

WATER . . . AND WILDLIFE. without the one you can't have the other



Rudolph P. Easterly

(Editor's note)—The author, director of the Louisiana Wild Life and Fisheries Commission, presented the following report to a United States Senate Select Committee on Natural Water Resources. The open hearing was held December 1, 1959 in Alexandria.

LOUISIANA has been richly blessed with many natural resources—renewable ones, such as fish, wildlife and forests. We are concerned with the wise use of these fish and wildlife resources and any laws, programs, or projects which affect them, since our responsibility is clearly defined. The Louisiana Legislature, in recognizing this rich heritage of fish and wildlife resources and their identity with the lives of our citizens, has coined the motto "Sportsman's Paradise" which is imprinted on our vehicle license plates. It behooves us to maintain and perpetuate this status.

We would like to emphasize the significant value of these fish and wildlife resources by establishing and recognizing their relationship in the overall economy. Administrators and technicians engaged in and concerned with these resources have found them to be commensurate or greater in value than any single agricultural commodity in Louisiana. Therefore, in our opinion, this field of interest deserves and merits equal status with other primary interests concerned with water resources.

Fish and wildlife resources are products of land and water. As such, these are closely associated and identified with water requirements, both in quantity and quality, even in the upland as well as the wetland areas. Productivity levels, among some of these resources, parallel that of agriculture and forestry and sometimes exceeds these on lands or waters of comparable fertility. Some land and water areas are obviously more suitable to wildlife than agriculture, and these should be maintained in a productive condition. However, we would like to emphasize that fish and wildlife can be compatible with agricultural and forestry practices under adequate provisions. Similarly, these natural resources can be compatible with water use programs in industrial, power, or flood control reservoirs or impoundments, where adequate planning and provisions are incorporated within the framework of the projects.

Statistical surveys of the direct and indirect values of fish and wildlife resources to our economy were made in the past few years by this Commission and the U. S. Fish and Wildlife Service. Additionally, our survey provided assistance in developing future programs to help meet the increasing needs reflected by the rapidly expanding population.

Prospective shorter work weeks emphasized the importance of providing outdoor recreational opportunities. Sport fishing and hunting attract a major portion of this interest which is substantiated by the expenditures made in pursuit of these endeavors.

The present state population is estimated to be 3,200,000 and is expected to increase to 4,300,000 in 1980. License sales show that only seven per cent of the sport fishermen (218,757) and eight per cent of the hunters (246,731) are licensed. However, other information indicates that only one in eight sport fishermen and one in three hunters are required to be licensed due to quite liberal state regulations. Thus, it is evident that major segments of this population have an interest in fish and wildlife resources.

Dollar value estimates were limited to the *licensed* sportsmen. These fishermen spend an estimated $80,480,000 annually in pursuit of this form of recreation. The average annual value per fisherman is $368, which includes a straight twenty per cent depreciation of equipment over a five-year period. Similarly, licensed hunters spend an estimated $41,850,000 annually, which provides an average value per hunter of $170, including a similar twenty per cent depreciation of equipment.

Estimates for the 1980 population, based upon the above data relative only to *licensed* sport fishermen and hunters according to the present license regulations and current trends suggest substantially increased expenditures. Based upon current levels, and in our opinion, annual expenditures of 452,700 sport fishermen will be approximately $166,525,000 and that of 427,700 hunters will be about $72,550,000. Such obvious differences between fishing and hunting expenditures as shown above can be readily explained. Louisiana's weather conditions and variety of waters afford year-around fishing opportunities, while hunting opportunities are limited essentially to only five months out of the year. These substantial differences suggest to us the importance of providing opportunities for recreation.

Present wetlands habitat appears to be adequate for the waterfowl in providing resting and feeding areas. However, it is distributed and controlled in such a way that public hunting places are becoming more limited each year.

This trapper depends upon our wildlife. It behooves us to maintain and perpetuate his status by wise use of these resources.

In relation to the above evaluation of Louisiana's fish and wildlife resources, it should be recognized that the federal government has the primary responsibility with respect to migratory birds. However, the states share in this responsibility considerably and, unquestionably, the cumulative contribution of the states greatly exceeds that of the federal government, as it should. As an example of the value of waterfowl to a segment of our population and some pertinent problems associated therewith, we would like to briefly outline them. Since 1951, this Commission has devoted considerable attention to this field of interest in addition to others. Listed below are pertinent facts associated with this wildlife resource.

1. Louisiana's wintering waterfowl day use amounts to 711,915,000 days, which is distributed over portions of its 10,816,695 acres of wetlands subdivided as follows:
   (a) Inland freshwater acreage—6,038,943 acres
   (b) Coastal freshwater acreage — 4,068,452 acres
   (c) Coastal saltwater acreage (not including open gulf acreage)—709,300 acres
2. Drainage and other works have greatly reduced the value of much of the wetlands to wildlife.
3. Present wetlands habitat appears to be adequate for the waterfowl in providing resting and feed-

(Continued on Page 17)

West Bay Bonanza

Howard Hebert displays one of the biggest deer killed during the West Bay hunt. It was one of two eight-point bucks which topped the scales at 155 pounds each. Hebert is from Lake Charles. (Photo by Sam Guillory, Lake Charles American Press.)

Frank Adams*

A LOG FIRE, struggling to hold its own against 30° cold in the blackness of pre-dawn, outlined shadowy figures moving about the small corrugated tin building at the foot of the Turner Fire Tower several miles south of Elizabeth, Louisiana.

Heavy boots stamped the ground as hunters tried to keep feet from growing numb as they waited at the windows for permits that would allow them to try for a deer in the West Bay Game Management area.

The flickering flames occasionally shot back a glint from a shotgun stacked against the shed. More frequently, the chilly scene was briefly illuminated by automobile headlights as another group of hunters pulled into the permit station area. A low hum of conversation was the only sound in the still morning —talk of luck or no luck the previous day, when the area had opened for a three-day controlled hunt, and talk of hopes for the coming day that was still hours away in the east. Only an occasional breeze disturbed the acrid exhaust fumes hanging in the air.

Inside the building, the muted roar of a gasoline lantern and the hiss of a small heater were welcome sounds after the cold outside. The cold crept in steadily as hunters approached the windows, exchanged their hunting licenses for deer permits and maps of the area, and moved away to their cars to seek out a likely hunting area. Some paused by the fire to examine the maps, conferring over terrain features that gave promise of game. Others roared into the night with interior lights sending back a feeble glow as the party tried to pick a destination and reach it first at the same time.

Introductions were made as the steady work of checking in hunters continued. Jack Sims, personable young Supervisor for the Wild Life and Fisheries Commission's District V, was in charge at the Turner station and had overall supervision of the three-day hunt.

With Sims were Jim Iles, biological aide at West Bay, and Scotty Goudeau, another biological aide. Scotty's usual assignment was the Opelousas district, but he had been called in to lend a hand with the West Bay hunt.

Holding down the fort at another permit station eight miles across the area was E. E. Garlington, West Bay supervisor, and Ray Palermo and Jack Collins, both biologists from the Alexandria district.

With me were Red Kohnke, my colleague on Southwest Outdoors, and Sam Guillory and Chuck Tillman, who were handling the cameras. The brilliant flash of strobe lights marked Sam's location outside the station as he fired away at the hunters waiting for permits.

Briefly, Jack outlined the rules. As each hunter exchanged his license for a one-day deer permit, he was given a sheet of management area regulations, pertaining to boundaries, the Allen parish ban on rifles for deer hunting and, most important, the ban on fires within the West Bay area. With the rules sheet was a detailed map of the area, showing roads, streams, swamp areas and other geographical features.

With the map, the hunter was on his own. He could go anywhere he figured the terrain offered good hunting, pick his stand and hope for the best. With only still-hunting permitted, it meant another hour or two of huddling in the cold, since there was always the

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* Outdoor Editor, Lake Charles American Press

Scotty Goudeau examines the teeth of a deer killed at West Bay to determine its age. Information obtained by biologists during controlled hunts is a vital part of the state's program to improve hunting. (Photo by Sam Guillory, Lake Charles American Press.)

Temperatures were below freezing, but these hunters don't seem to mind as they await their turn at the permit station at West Bay. (Photo by Sam Guillory, Lake Charles American Press.)

possibility that too much movement would spook a big buck that might be bedded down behind the next bush.

As Jim and Scotty handed out permits and maps in a steady stream, Jack filled us in on the preceding day's hunt.

West Bay, established in 1949, is one of the oldest game management areas on the commission's roster, and, at 18,000 acres, it is among the smaller areas. This marked the first time that the Wild Life Commission approved a deer hunt on West Bay, although a controlled squirrel hunt was held in the area in 1955.

The lure of land that hadn't been hunted in ten years proved strong. Saturday's opening drew 1,592 hunters, averaging out to about one hunter to every 12 acres. With a hunter behind practically every tree, 59 deer were taken Saturday, but the whitetails weren't slow to figure out that something was amiss, as we were to learn.

One point was gratifying to Sims. With the heavy hunter concentration on Saturday, there hadn't been a single accident report. "There are a lot of hunters up here this weekend who are out for the first time," Jack pointed out, "and I think the fact that everyone has behaved so far is a fine showing for hunter-education work."

Jim Iles took over the conversation, describing the post-hunt work. The biologists inspect and weigh every deer taken in the area. If possible, blood samples are taken for analysis. Teeth are examined to check the age of deer killed, and antlers are examined to assist in the determination of the overall physical condition of the herd.

Iles pointed out that information obtained from a controlled hunt gives biologists a good picture of deer herd development in a given area and provides data which can be used to properly manage a deer herd. Compared with other areas of the state, an overall picture develops which shows just what is needed to build up the state's herds.

The same technique is followed with other game. Jim predicted that within a few years it may be possible to hold hunts in the area for wild turkey, a bird that has all but disappeared from the scene.

Three Sulphur, Louisiana, men show their pleasure as they bring in a deer for checking at the permit station. From left to right are: R. V. McCraney, Joe Denton, and W. H. Denton. W. H. bagged the buck, which field dressed at 86 pounds.

Alvin Hebert of Welsh, Louisiana, is ready for action as he picks up his deer permit and map of the West Bay area. (Photo by Sam Guillory, Lake Charles American Press.)

It's 5:00 a.m., but these Wild Life and Fisheries Commission workers have already put in two hours preparing for the second day of the controlled deer hunt at West Bay Game Management area. From left to right are: Scotty Goudeau, biological aide from the Opelousas district, Jack Sims, District V supervisor, and Jim Iles, biological aide. (Photo by Sam Guillory, Lake Charles American Press.)

Jack made another point, a fine distinction that often escapes the uninitiated:

"This is a game management area, not a wildlife refuge. The main goal of a refuge is strict protection for game, offering a sanctuary where they are in no danger of being hunted."

Iles added to the explanation, "Our work here, and in other game management areas, is to study the increase and growth patterns of various types of game, under conditions that we are familiar with. By recording progress made under various types of environment, we can learn a great deal about what to expect from different kinds of game in different areas."

As we noted later Iles' claims for the squirrel population were not exaggerated. At one time, Red had 12 bushytails in sight, and I spent about ten minutes watching a fox squirrel the size of a raccoon scold over my invasion of his privacy.

By now, Sam had finished the first phase of the photo work and we headed for the woods. By the time we had worked up a roughly-cleared right-of-way, it wasn't cold at all, but after a half-hour on the stand, it was. Daylight was still to come, and every noise had 14 points.

With the first lightening in the east, the far-off "karoomph" of heavy shotguns began to resound through the woods. Soon it was akin to a pitched battle between armies, but in our area it was silent except for the noises which still sounded like 14 points —but weren't.

Sam watched a young doe amble past him about 20 yards away, but aside from tracks, that was the only sign of deer. Two novices, snug but reckless in blue parkas, drew a silent cussing from Red when they suddenly bobbed up behind a brush pile several yards away and inquired, "Seen any deer, Mac?"

Sunday's attendance dropped off to 823, we later learned, but we covered much more than 12 acres that had been allotted to Saturday's crew without hearing anything good. From the sounds of shooting, there should have been deer all over the area, but none had been sighted, except by one grizzled pair who had cracked down on a bunch of four bucks without success, a mile or so from us.

Back at the permit station, we found out that only nine bucks had been bagged. By Monday's final day, the deer were really shrewd and the 345 hunters on hand netted only four deer as the animals dispersed over the countryside. That brought the three-day total to 2,760 hunters and 72 deer. The biggest were a pair of 155-pound eight-pointers.

As we prepared to leave, Jack climbed back into his station wagon for another swing around the area. Several hunters had been picked up for violations, but the number was small. "I think it's a good sign," Jack said. "Ten years ago we'd have gone crazy trying to keep order on a hunt like this, but nearly everyone is behaving as though he had personal stakes in this work."

He paused, watching as more hunters checked in and headed for the woods. "I hope they come out on time. Last night we were here until 8:00 p.m. checking out stragglers who didn't make the 5:00 p.m. deadline. And three o'clock sure comes early in the morning."

Jack watched another group of hunters leave for the timberland.

"It's well worth the effort, though."

Tips On Casting

You don't have to be able to knock out a gnat's eye at forty paces in order to catch fish consistently . . . but it helps.

Accurate casting probably accounts for as many full strings during those long dry spells as any other single factor. During the summer months, especially, fish are fat and particular, and aren't inclined to gobble just any morsel that happens their way.

Fish become lazy—even spoiled. To interrupt this lethargy, it's necessary to serve up a lure on a silver platter. In other words, you must literally wave it under his nose to make him strike. Obtaining sufficient casting ability to entice a lunker out of his cozy lair is simply a matter of observing several basic rules, and then applying them with much practice.

Aim, back cast, forward cast, stop.

These four steps, correctly performed, are the secret to casting. First, aim your rod like you would a rifle and concentrate on the target. Using your elbow as a pivot, bring the rod back smoothly, and halt it when almost vertical. Then snap it forward with a firm down stroke, applying extra wrist power.

When the rod reaches a point halfway between the vertical and horizontal position, ease off with your thumb or finger to permit the line to pay off. When the lure approaches its target, feather it to a stop.

The important thing about casting is to get in plenty of practice. If you can knock out that proverbial gnat's eye in the backyard, you'll score consistently on the lakes and rivers. Good casting means good fishing.

Tenement
Gossips

PURPLE MARTIN

Progne subis subis

Hannah Yates

A RELATIVE OF the swallows, and in good repute everywhere, the Purple Martin is undoubtedly the most popular of all the species. Its length is about eight inches, and its plumage is very glossy, steel-blue black with bluish purple reflections. It has lustrous and semi-metallic black on its wings and tail. Its wings are longer than its tail which is forked. The female is more brown and mottled with grayish underparts.

Houses are erected for their accommodations and in sections of the South, gourds are seen swinging from cross strips on top of a tall pole. A normal clutch is four to five dead-white eggs in a cozy nest, be it in a swaying gourd, or a neatly tiered apartment house. The Indians were the first to hang gourds to attract martins to their fields, and when the early settlers came they followed the example adding handmade houses with separate compartments for each bird family.

Purple Martins are very sociable birds and live in colonies, even during the nesting season when most birds prefer to be alone. They might well be called the gossips of the bird world for seemingly they have a wonderful time chattering with each other from their respective doorways, unlike people, though, their gossiping never leads to serious feuds. Each family attends strictly to its own affairs, so the community is always cheerful and happy. However, woe betide any marauder that dares approach, for the whole colony will gang up on him in a hurry. Purple Martins defend their nests with great tenacity, driving away crows and hawks, therefore, they are cherished as important guardians of the poultry yards. Nests are made of sticks, stems, feathers, grasses and mud. Originally the home site would be a hollow tree, but so dependent have the birds become on man's bounty, that now they rarely use trees, having adjusted well to carpentered dwellings.

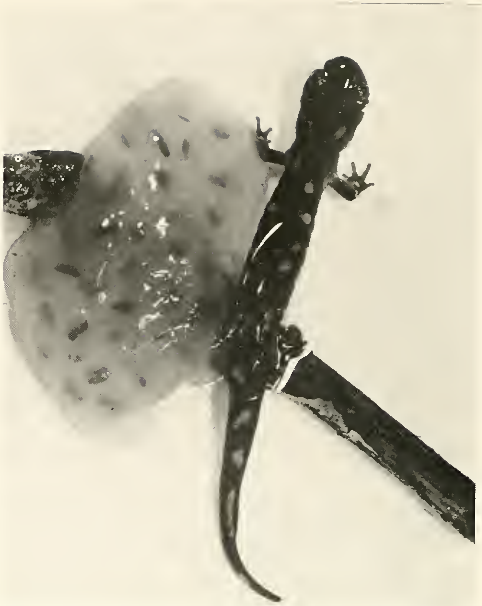
Martin small talk is as varied as it is incessant, when a colony is in full swing, active, swooping, fluttering, constantly coming and going, the air is filled with chirrups, squeaks, whistles and trills. The activity and excitement is greater after the eggs are hatched for then the parents are arriving with food, consisting of dragon-flies, butterflies, and all manner of flying insects. Apparently there could be no way of living more delightful to a bird than sailing through the air playing cross-tag on the wing with its companions, catching thousands of insects that pester other animals besides ourselves. The very thought of the mosquito bites alone that they prevent puts everyone greatly in their debt. The southern states are fortunate to have this valuable bird. A colony of martins circling about a house, give it a home-like atmosphere, their soft conversation with each other as they fly, resembles rippling, musical laughter.

Once a few pairs of these birds decide to settle in one group, they will return to their same home year after year, accompanied by some of the previous season's young, so the family increases to surprising size.

It is believed that the Purple Martin was once of the tropics, eventually spreading to the southern states by virtue of its great power of flight. Certainly they succumb to wet and cold weather at which time insects are also very hard to find. This fact may account for their scarcity in northern areas. Again in some sections the English Sparrows take over their nesting places before the martins can set up spring housekeeping. In any event, the southern states are the place to find martins and it is likely that many a northern bird watcher has never seen one.

As time goes on, bird fanciers and practical gardeners, like the Indians of yore, are beginning to realize the value of the Purple Martin not only as an attractive and interesting addition to the general scenery but also as an efficient destroyer of insect pests and that is why martin houses are becoming more and more in the vogue near homes, gardens, and orchards where insects in the winged stage abound and are devoured by these birds.

The Spotted Salamander (*Ambystoma maculatum*). An inhabitant of damp wooded uplands, this yellow-spotted creature is seldom seen, as it comes out to spawn once a year, in mid-winter.



Egg-mass of the Spotted Salamander. In this batch, the hatching larvae can be seen through the jelly, which is colored greenish by symbiotic algae. Note egg-mass as compared to salamander.

Salamanders In Louisiana

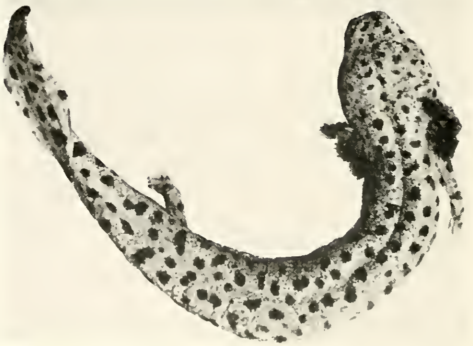
Percy Viosca, Jr.

PERHAPS THE MOST truly cold-blooded of the so-called cold-blooded animals are among the salamanders. Some thrive at temperatures close to the freezing point. Others deposit their eggs during the middle of winter. Some species are seldom seen except when winter rains raise the water table to the forest floor and bring them to the surface, and also provide temporary pools in which they lay their eggs.

These secretive amphibians are not as well known to the general public as are the frogs and toads, which are wont to announce their presence wherever they may be. Whereas frogs and toads absorb their tails when about to leave the water, adult salamanders retain their tails throughout their lifetime. They can even grow a new tail when the original has been bitten off by a predator.

About 86 species of salamanders, and many varieties, have been recorded from the continental block of 48 "original" states. Louisiana has about 18 kinds, or about 21% of this total. Elsewhere, many types of salamanders inhabit rocky country, where they live along the mossy banks of mountain streams, or in crevices and caves. Such, of course, we lack.

Having few rocks, most of our native salamanders live in the next best situation, the sandy valleys of small clear streams, where they hide amidst accumulations of humus from rotting logs, forest litter, and tangles of ferns and mosses. They are especially nu-



The Speckled Waterdog (*Necturus beyeri*). This is an inhabitant of coastwise streams of Louisiana, from the Pearl River to the Sabine. It can be taken best in February, by using trotlines or cloth-covered minnow traps baited with earthworms, small crawfish or minnows. It lives well in aquaria and is fond of expensive tropical fish as well as native minnows.

merous near oozing springs. Some few kinds spend their entire lives in water. These include the waterdogs of creeks and rivers, and the eel-like forms which inhabit lakes and swamps. Some, like the water lizard, have both water and land forms.

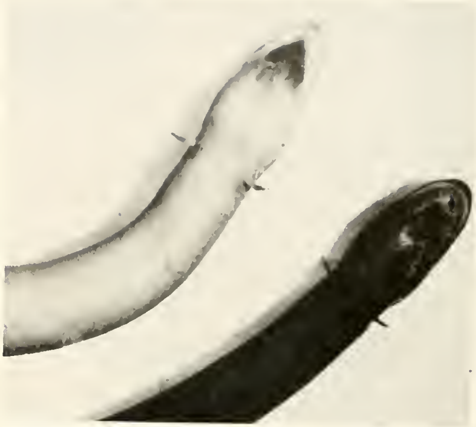
Whenever I talk about salamanders, I must make it clear that I am not referring to the "pocket gopher", because this little burrowing mammal is falsely called "salamander" throughout the Deep South. On the other hand, many a true amphiabian salamander is better known by its popular name, "puppy dog", a name more suggestive of a small mammal.

To further make myself understood, I have been compelled to coin a silly, but understandable, definition: "A salamander is an animal that looks like a lizard, but feels like a frog." This is a rule not without exceptions, however, for Louisiana has at least three salamander species which are more snake-like than lizard-like. In fact, their bodies are so long drawn out, and their legs and toes are so small (in one species the hind legs are missing), that you would be more apt to mistake them for eels than for true salamanders.

Our smallest kind is the *dwarf salamander*, a slender little animal about 2½ inches long when fully grown. Our bulkiest is the *three-toed blind eel,* also known as the "Congo eel." This is a rather chubby, eel-like creature which may be three feet in length. Other kinds of Louisiana salamanders vary from very slender to very stout, with sizes and shapes in between those mentioned. Colors may be brownish, red, yellowish or purplish; black, white or shades of gray. Patterns may be uniform, striped lengthways, mottled or spotted.

Salamanders, no doubt, regardless of size, are edible. The giant hellbenders of Japan, which grow to a length of five feet, have been virtually exterminated because they are considered great delicacies. Waterdogs have been eaten in other parts of this country. An American herpetological society once dined at Fontainebleau State Park, with blind eels as the "piece de resistance" of their meal. It is only fair to note, however, that some salamanders give off skin secretions which seem to be objectionable to their potential enemies. So if facilities are available, I would suggest that you cook the beasts, or at least remove their skins. They could well serve as survival rations during an atom war, for animals in their tunnels would be protected for the most part from radioactive fallout.

Some of the large aquatic salamanders are better known as "waterdogs." We have two kinds in Louisiana, the *speckled waterdog,* and the *Louisiana waterdog.* The *speckled waterdog* is found in coast-wise streams and their tributaries, from the Pearl River to the Sabine, exclusive of the Mississippi system. The *Louisiana waterdog* is of more northerly distribution within the state, and is best known from small tributaries of the Red River. They both live in streams which are normally clear during dry seasons and in which the oxygen content is usually high. They breathe by means of external gills, which are seen as bright red, feathery fringes which project from the sides of the head. However, they can, when necessary, supplement their oxygen supply by coming to the surface for an occasional bubble of air.



Underparts of the two kinds of blind eels. The three-toed species (*Amphiuma tridactylum*) is on the left, the two-toed species (*Amphiuma means*) on the right. Note that only the throat is dark on the three-toed species, found over most of the state, whereas the entire underside is dark on the somewhat more slender, two-toed species.

For most of their lives, waterdogs are hidden in holes under stumps, roots and accumulations of debris, from which they prey on passing aquatic insects, worms, crawfish and minnows. In late winter, before the predatory fish become too active, they come out of their holes to mate and spawn. They can be caught best in January and February, by using trotlines or cloth-covered minnow traps, baited with earthworms,

(Continued on Page 15)

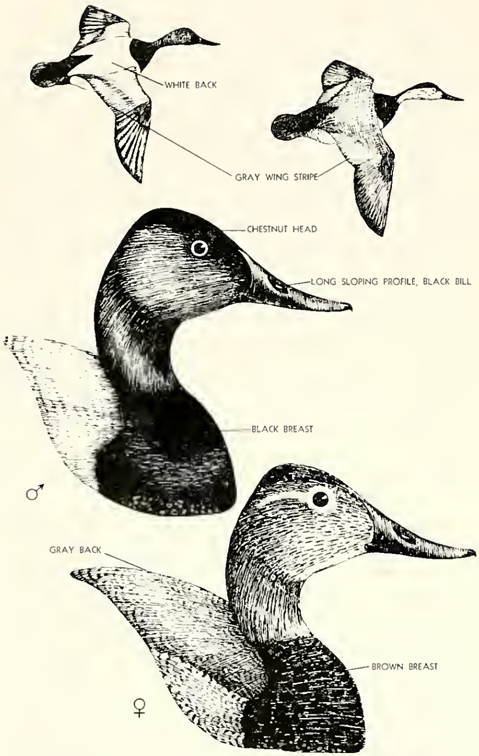
The Slimy Salamander (*Plethodon glutinosus*). This is one of several species found in rotten logs and amidst forest litter by persons searching for fish baits. The sticky slime is a protective device, for it not only prevents evaporation during dry seasons, but seems to be distasteful, if not poisonous, to potential enemies.

LOUISIANA

By Dick Yancey

CANVASBACK

(Aythya valisineria)



Although Louisiana winters a relatively small population of canvasbacks these are considered by many hunters to be the most highly prized of our ducks when brought to bag. During the winter it is seldom that more than 30,000 can be found in Louisiana, while the total number usually averages between 20,000 and 25,000.

This species is readily identified by its rather large size and long sloping bill. When in the hand it is most easily confused with the red head.

The areas most heavily used by canvasbacks in Louisiana are the oxbow lakes in northeast Louisiana, Lake Verret, Lake Des Allemands, Lake Salvador, and the eastern rim of the Mississippi River Delta. Substantial numbers utilize Catahoula Lake in the late winter and early spring when the water levels are high. Very few canvasbacks winter in western Louisiana, although small numbers are occasionally observed in the marshes along the western shore of Vermilion Bay.

They prefer fresh water and slightly brackish water areas where large quantities of submerged aquatic vegetation or parts of emergent plants are available for food. Watershield, delta duck potato, banana water lily, and chufa are a few of the more favored foods of the canvasbacks in Louisiana. Small quantities of animal matter are also consumed along with the plant material.

The initial migration of canvasback into Louisiana nearly always occurs within a few days of November 1 of each year, along with the other diving ducks. Scattered flocks continue to arrive in the state as late as mid-December. The fall migration is always considered complete by that time. The spring departure of these ducks usually begins in late February. Small numbers are still to be observed by March 1, but the spring migration is considered complete each year by March 10.

Most of the canvasbacks that enter the Mississippi Flyway proceed in an easterly direction across the northern tier of states directly to the Atlantic Coast. Only small numbers migrate southward to the lower end of the Mississippi Flyway. Illinois, Michigan, and Louisiana are the only three of the fourteen Mississippi Flyway states that maintain appreciable flocks throughout the winter. Although the canvasback is locally important to hunters in certain areas of Louisiana they make up only .6% of the total number of ducks bagged in the state each season. This, of course, means that less than one out of every one hundred ducks taken is a canvasback. This proportion of the kill approximately equals the percentage that the species makes up in the population, therefore, the canvasbacks are absorbing a fair share of the hunting pressure. Like the other diving ducks they are vulnerable to hunting and the kill would undoubtedly be much heavier if they did not frequent areas in the state that are very lightly gunned. Substantial flocks utilize the deep oxbow lakes extending from False River to the Arkansas line in northeast Louisiana and very few hunting efforts are made on these areas. The greatest kill of canvasbacks in the state occurs in southeast Louisiana, particularly around the Mississippi River Delta.

The best measures that can be taken in Louisiana insofar as canvasbacks are concerned is to maintain our lakes in a condition productive of aquatic vegetation. At the same time such areas as Catahoula Lake should be maintained in its natural state in order to insure the future production of chufa and millet. This is a most important single canvasback area in Louisiana during January and February. At the same time waterfowl hunters would do well to support existing regulations designed to hold down the kill on this species until such time as better nesting conditions prevail in Canada and some production of young occurs.

WATERFOWL

THE RING-NECKED duck is exceeded in importance only by the lesser scaup in Louisiana's diving duck populations. Although the two species are commonly confused by observers they have certain marked differences in appearance. The grey wing stripe and white ring around the bill readily separates the ring-necked duck since the lesser scaup has a white wing stripe and blue bill.

In addition to these variations in appearance the two species greatly differ in food habits and wintering ground preferences. The ring-necked duck prefers to use shallow fresh water areas less than 4 ft. in depth where an abundance of aquatic vegetation is available. They are largely vegetarians and make heavy use of watershield, coontail, duck weed, southern naiad and chara. On the other hand lesser scaup readily utilizes water areas of 20 ft. in depth or more, they prefer animal matter for food and also prefer brackish or salt water as wintering habitat. Some overlapping does occur since small scattered flocks of ring-necks will occasionally penetrate into the slightly brackish marshes of south Louisiana, and small numbers of scaup winter on the fresh water lakes of north Louisiana.

Louisiana's wintering ring-necked duck population seldom exceeds 60,000 in size. It normally averages approximately 40,000. These figures are averaged from 10 years of waterfowl inventories conducted by the Louisiana Wild Life & Fisheries Commission.

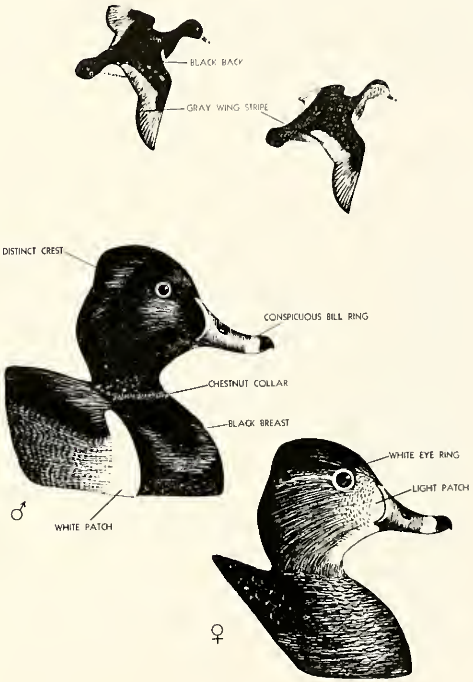
The first migration of ring-necks occur in a calendar-like manner within two or three days before or after November 1 of each year. This flight generally coincides with the movement of lesser scaup and usually precedes a cold front by twelve to twenty-four hours. It is believed that many of the ring-necks that arrive with this flight proceed through the state to other wintering grounds. The spring migration back to the nesting grounds in Canada usually begins about March 1. This departure is usually complete by April 1, however, small numbers are nearly always observed as late as mid-April.

Upon arrival in Louisiana most of the ring-necks seek out shallow fresh-water lakes dominated by stands of submerged aquatics, such as those mentioned above.

Unlike the other diving ducks this species readily utilizes flooded areas occupied by cypress, buttonbush, and willow. They are frequently seen in flooded timberlands while other diving ducks confine their activities to open bodies of water.

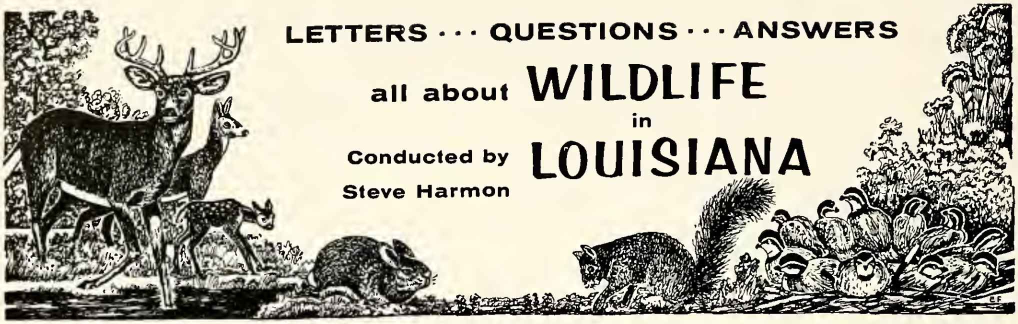
This is the only diving duck that has suffered an appreciable loss of habitat in Louisiana in recent years. Many of the shallow water permanent lakes have been either drained or flooded out by excess water through the construction of dams. As yet, however, this does not appear to be a limiting factor insofar as our existing wintering population is concerned. This loss does detract from the amount of area available for use by hunters and since the ring-necks are favored by many this loss of habitat has resulted in some detrimental results. In relating the kill to the population this species is one of the most heavily shot in Louisiana. They make up usually only about 1% of the duck population, however, they nearly always comprise 4% or 5% of the total kill. This occurs mainly because the ducks frequent heavily hunted areas and at the same time they are rather easily bagged.

RING-NECKED DUCK
(Aythya collaris)



If additional ring-necked duck habitat is deemed necessary in the future this can be accomplished by reflooding lakes and cypress breaks that have been drained in the past. Another form of development would be through the construction of permanent water impoundments by means of low levees and water control devices.

The overall status of the ring-necked duck population is considered precarious at this time, particularly in the Atlantic Flyway. The precise reason for this is not known, however, efforts are being made to determine the cause. Indications to date show that gunning pressure may be responsible, as in the case of the canvasback and redhead populations.



LETTERS ··· QUESTIONS ··· ANSWERS

all about WILDLIFE in LOUISIANA

Conducted by
Steve Harmon

Dear Editor: New Orleans, Louisiana

Being a consistent reader of your magazine, although I do not receive it direct from you; i.e., Mr. Calvin J. Kaupp, Music Street, receives it from you and passes it on to me; I am taking the liberty of this letter.

During the last duck hunting season my son shot a lesser Scaup in the vicinity of the Chef Menteur-Lake Borgne area with a band on its leg. I wrote the Wildlife and Fisheries, Washington, D. C., and received reply from them. The information they furnished was appreciated and interesting with particular interest being shown on the reverse side of their letter-a photostat of this information is attached for your convenience.

I and my associates were amazed at the age and distances of flights of some of the species of ducks we here in this local area hunt. I had never read anything in any magazine, particularly in your magazine, of this nature.

Perhaps at your discretion, you will someday publish something passing this information along to your readers, which I am sure will greatly enlighten their knowledge of the species of ducks we here are familiar with.

I would also appreciate very much you adding my name to the mailing list of your magazine. *Thanking you in advance.—Noel R. Gillan, Sr.*

For several years we have published information about waterfowl that winter in Louisiana. In the December, 1959 issue of the LOUISIANA CONSERVATIONIST, a story appeared on the Lesser Scaup. Your name has been added to the mailing list.

Dear Editor: New Orleans, La.

The recent accident that proved to be fatal to a deer hunter near Waterproof, Louisiana, as the result of an accidental shooting by another hunter with a rifle, has brought up a discussion with some of my friends. Reference to the October and November issues of the CONSERVATIONIST containing the hunting regulations only confused the issues a little more.

Does the last paragraph under Migratory Regulations apply only to migratory game or do they apply to all game in Louisiana?

Will you please advise with reference to the use of rifles, shotguns of larger than 10 gauge and the use of unplugged shotguns.

Is the stalking or hunting of wild turkeys with dogs permitted?—*Lewis A. Lackin.*

We hope this may answer your inquiries of December 30.

The last paragraph under migratory regulations applies to game birds only.

Use of shotguns larger than 10 gauge and capable of holding more than three shells is prohibited on all game. Repeating shotguns must be plugged. Rifles not smaller than .22 caliber may be used for taking wild game animals, unless local restrictions prohibit.

The hunting of turkeys with dogs is permitted in open season, but they are of little use in Louisiana's spring season. Dogs are used in some states having a fall or winter season.—J. Edouard Morgan.

Hurley Campbell, center, Outdoors editor for the Baton Rouge Morning Advocate, received the award as "Conservationist of the Year" from the Baton Rouge Sportsmen's League. This was the first such award made by the group and seen with him are, left, Bob Williamson, president of the Baton Rouge Exchange Club who made the nomination and Colonel Bill Hornsey, right, newly elected president of the league who served as Chairman of the Conservation Committee for 1959.

Dear Editor: Leander, La.

I have lived in Louisiana all my life and I believe in our game laws. And I think our GMA are the best thing our state has. And I know they are operated in a matter that is the best for the hunter and the game but there is one thing I don't understand and I am not for it and that is allowing the does to be killed. We have a few deer around us here but we need more does if there is too many in the GMA. Why not trap them and bring them out in our river bottoms and other wooded areas that could support them.

And I would like to know if ring-neck pheasants could live and multiply around here. A friend of mine has some in a cage and just as fast as they get big enough to turn loose he puts them out. They lay good in the spring and he sets the eggs under a bantam hen. He has turned quite a few loose but so far none has been seen.

And about that doe business. I wish they would STOP that. It's a shame to see all the young doe shot.—*A. C. Wallace.*

Thank you for your interest in and support of the operation of Game Management Areas in furnishing hunting opportunities to many Louisiana hunters. We believe that the future hunting opportunities of many hunters in Louisiana lies in the acquisition, expansion, and management of these areas.

In regard to your suggestion about trapping surplus deer off of the game management areas and distributing them in other suitable parts of of the state rather than killing any does; as you know, the Louisiana Wild Life and Fisheries Commission has carried out a deer restocking program for many years and this project has been highly successful as evidenced by the fact that that many more parishes have open hunting seasons now than ten years ago. This program is being continued but we have found that it is impossible to maintain deer herds in balance, with available range conditions, by trapping only. At the same time it is impossible to maintain this needed balance by shooting bucks only and for this reason it has become necessary to permit the controlled taking of does on the Game Management Areas. We are striving to prevent the overbrowsing of the available food supplies on the GMA's since a deterioration of the deer herds will occur if they have little to eat. You will note that the removal of only a certain number of deer is permitted from each area each season, and this figure is determined by biological examination which takes into consideration existing herd sizes, sex ratios, food conditions for deer, and other pertinent information. At no time would the commission take action that would result in damage to a deer herd on any GMA since much effort and many thousands of dollars has been spent in building up the existing network over the state.

Several years ago, this department experimented with ring-necked pheasant and released a number of birds in the wild. Generally, pheasants do not reproduce in the wild, year after year, in Louisiana. In reference to your friend's releasing quite a few pheasants and not seeing them any more, it seems that humidity and mineral conditions do not meet the pheasant's requirements in this area so as to provide for reproduction in the wild on a continuous annual basis.—T. B. Ford, Acting Chief, Fish and Game Division.

Dear Editor: Buras, La.

It is with great pleasure that I wish to thank you for furnishing me with the material about the armadillo from the LOUISIANA CONSERVATIONIST.

My father is a subscriber and we look forward to each copy because it is not only educational, but also informative and interesting.

We live in Plaquemines parish. Perhaps you would be interested in learning where the word Plaquemines originated. It comes from the Mobilian Indian word "Piakimin" meaning persimmon.

Nature did not seem satisfied with the abundance supplied on the surface of the earth in Plaquemines, but below the marsh and the shallow waters of the Gulf, oil, natural gas, and sulphur, exist in such quantities that Plaquemines has become one of the richest parishes in Louisiana. Seafood has always been important with wildlife in abundance, and the parish has long been noted for its oranges. *Thank you so much for your magazine.—Angelo Casteglia.*

Dear Editor: Tallulah, La.

Would you please print this picture in your next issue of the CONSERVATIONIST? Pictured is: A/2c Gerald J. Horn, my son, who bagged this 7-pointer on Spike Club, December 9, 1959. The buck dressed out at 161 pounds. *Thank you so much. Mrs. J. O. Horn.*

Dear Editor: Baton Rouge, La.

I wish to thank you for keeping my name on your mailing list for the distribution of the CONSERVATIONIST. I find this publication to be of great interest and I enjoy reading it because it is instructive and informative.

After we read it, my wife and I, we pass it on to our daughter, who teaches in St. Joseph Parochial school, New Roads, Louisiana. She tells me that her students are avid readers of the publication and they look forward to getting it.—*Henry R. Montecino, K. S. G. Supervisor, Baton Rouge Catholic School Safety Program.*

Dear Editor: New Iberia, La.

I have read in the Louisiana Conservationist your articles about improving water fowl feed in the coastal marshes in Louisiana. I would like very much for more information on improving and growing water fowl feed in the coastal marshes around the Pecan Island area in Vermilion Parish. Also, any information on what would be the best types of feed to plant in a wet marsh.

Would there be someone in this area whom I could contact about obtaining more information on this subject? If so, please send me his name and address.—Sherry Lopez.

Our investigations of waterfowl food conditions around the State of Louisiana has shown that the marshes around Pecan Island are about the most productive that we now have. In recent years wild millet, smart weed, and cyperus has grown in profusion in this area and attracted large numbers of ducks during the winter.

It is always difficult to make recommendations on the improvement of an area without first making a field examination. Generally, however, management of these marshes should be directed towards the production of millet in the marshes and widgeon grass, a submerged aquatic grass, in the ponds. Control of water levels is very desirable in producing either or both of these two plants. Such control can be gained through the construction of levees and water control structures, however, this is generally very expensive. The planting of various types of waterfowl food in this section without first gaining proper control over water levels is somewhat a waste of time and money.

If funds can be secured to construct an impoundment, the area should be drained in the spring and summer in order to encourage the natural growth and production of millet, and reflooded in the fall and winter when the ducks arrive. This type of marsh would be most heavily used by mallards, pintails, and teal. Widgeon grass can be readily produced in this section by maintaining water over the marsh throughout the year. The water would, of course, be slightly brackish and if maintained in a stable condition the production of widgeon grass would probably be certain. Practically all species of waterfowl use this plant, particularly gadwall and widgeon. —R. K. Yancey, Chief, Refuge Division.

Results of a coon hunt in the Morganza spillway, bagged by Lawrence C. McAdams and his grandfather (right) James L. Wells. Mr. Wells is holding an albino coon. Imagine the surprise Lawrence McAdams had when this rarity hit the ground! He weighed 20 pounds.

Nine jackfish caught on a "pre-rodeo run" by (left to right) Dr. P. E. Landeche, his son, and Frank Bosco, all of Hahnville, Louisiana.

Mack Lyddy, 10-year old son of Mr. and Mrs. Tim Lyddy of Many, is pictured above with his seven-point buck he killed near Fisher in Sabine Parish.

MISSOURI INCREASES FISHING FEE

The Missouri Conservation Commission will increase the resident annual fishing fee from $2 to $3 in 1960, making it the same as the hunting fee. The new increase is expected to produce an additional $300,000 annually for a stepped-up fisheries program.

Louisiana spends less than $100,000 per year on its fisheries management program. The Wild Life and Fisheries Commission reports only 160,000 resident fishing licenses sold in 1958.

SHE GOT HER REVENGE!

The National Wildlife Federation has been advised that an irate Memphis woman, fined $10 and assessed court costs of $11 for fishing without a license, got her revenge recently by paying off with 2,100 pennies!

SALAMANDERS

(Continued from Page 9)

small crawfish or minnows, and set out on miserable, cold, rainy nights.

Many an old-timer, trying to jump the gun on the early fishing, has hooked a waterdog. At the mere sight of the weird creature, especially if he has a bottle along to keep him warm, he would usually drop everything and run for dear life, stumbling over cypress knees and fallen logs. Only the very brave would cut the line near the hook and release the supposedly venomous varmint. But times have changed.

Next on our list of Louisiana salamanders, is the *two-legged eel* or "siren." There is still much to be learned about this beast, and whether or not we harbor one or two kinds. They are strange creatures, with two small front limbs, but no hind limbs. They breathe with external gills, much like those of the waterdogs. Most of the creatures captured are a foot or so in length, but occasionally a much larger one is seen in one of the larger inland lakes. It seems next to impossible to get hold of one of these giants. Smaller specimens are usually found in swamps or amongst the vegetation of lakes. Occasionally, they are found in underground tunnels near such places.

The *spotted salamander* belongs to a group which live in water and breathe by means of gills when young, but tunnels into the ground and breathes by means of lungs when it attains the adult form. However, the adults leave their tunnels after heavy rains on winter nights, usually in January, and deposit their spawn in temporary pools. By dawn, the adults will have left the pond and tunnelled into the ground, to disappear for another year. By watching the weather closely, one can become expert at predicting this annual event.

The eggs of the *spotted salamander* are large and black, resembling bird shot. These are encased in globules of clear jelly. Masses of about 30 to 175 eggs are clustered together. These egg masses soon become greenish with algae, which furnish oxygen to the developing embryos, which might otherwise die in these stagnant pools.

The larvae resemble miniature waterdogs. They feed on mosquito and midge larvae and tiny crustaceans. When about four months old, and about three inches long, their gills shrivel up and they leave the water. They are now black with a row of yellow spots on each side of the back, and a single row along the top of the tail.

The *mole salamander* and the *smallmouth salamander* are also woodland species, whose habits are strikingly similar to those of the spotted salamander. The first-named is an inhabitant of sandy creek valleys, whereas the second is more or less statewide in the alluvial bottomlands.

The black and white *marbled salamander* has the peculiar habit of laying its eggs in the fall of the year under forest litter near the edges of dried up pools. The females coil up around their eggs and await the winter rains. Meanwhile, the embryos develop within the egg membrane to full-blown larvae. When the egg-membranes are wetted by the rising water-level, they swell up and pop open to release the wiggling larvae into the new-formed pools.

In these parts, a newt is generally known as a *water lizard*. In the permanent swamps of this state, from which the Louisiana newt was first described, it can and usually remains in water throughout its life span. However, if and when the swamps or ponds go dry, as they occasionally do, the water lizard can develop into a land form. This they do regularly in the uplands of the state, where it is the usual thing for pools to dry up during summer and fall. The land form of a newt is called an "eft", and is usually found under forest litter and in rotting logs.

The blind eels might be described as long drawn out salamanders. We have two kinds here, the *two-toed blind eel* and the *three-toed blind eel*. The two-toed species is limited in its distribution to the acid swamps of the Florida parishes: pitcher plant bogs, gum ponds, small stream valleys and such places. The three-toed species in found in neutral to alkaline waters throughout most of the state, including the big cypress-tupelo swamps. The three-toed kind is the heavier of the two species. Both are found in southern St. Tammany parish, but usually not in the same places. Sometimes, they can be found together where the acid waters of the pine lands merge with the alkaline backwaters of Lake Pontchartrain.

Blind eels live in tunnels at the edges of the swamps of their respective areas, feeding largely on crawfish. When the swamps go dry, they take refuge in deeper tunnels below the water table. These, together with crawfish tunnels, enable small fish and other wetland creatures to survive even the driest of seasons, and so restock the swamps when the rains fall once more. Sometimes the "eel" tunnels extend considerable distances into the adjacent higher lands. When canals and ditches are dug to drain the swamps, the blind eels take refuge in these man-made environments. Blind eels have no gills, but breathe through their skin and by gulping air which supplies oxygen through the blood vessels in the throat.

In southern Louisiana, blind eels are frequently known as "Congo eels", a name no doubt brought over to this country by African slaves and perhaps transferred from some African species to these native American salamanders. When I was a boy, I was warned by friendly, but uninformed colored folks, never to walk barefooted in ditches and swamps, for there dwelt therein a "daidly" creature known as the "Congo eel." Eventually I became skeptical and disobeyed this admonition, for otherwise I would have been deprived of catching frogs and snapping turtles, for shoes were hard to come by during the depressions, or "panics", of those times.

In south Louisiana, the poisonous *water moccasin* is known as the "Congo snake" or simply as the "Congo." It lives in the same habitats as the "Congo eels." No doubt, the slaves, digging ditches in the lowlands, found both creatures plentiful. Bitten by a poisonous snake, they may have wrongly accused the harmless salamander of the same name and color. I am sure the panicky slaves would have taken little time to make positive identification of the "deadly varmint." Although it may be possible for a blind eel to rupture the human skin, I have never heard of anyone actually being bitten. I have caught or handled hundreds with my bare hands and have yet to be bitten, so have come to the conclusion that they are largely bluffers.

Our remaining eight kinds of salamanders are moderate to small lizard-like creatures. They are divided between spring branch and woodland pool species, with one exception, the *slimy salamander* which makes its home in decaying logs. Here the last named lays its eggs, and the embryos lose their gills before they hatch from the egg membrane. These never enter water at any stage. The slime protects them from evaporation. The woodland pool species deposit their eggs in temporary pools, whereas the spring branch species choose to lay their eggs in oozy springs. The young of both these kinds have external gills and resemble miniature waterdogs. Except for the *slimy salamander,* most land salamanders remain near the edge of the water, where they spend most of their time under forest litter and in underground tunnels.

A list of the eighteen kinds of salamanders which have been recorded from Louisiana, with notes on where they are most likely to be found, follows:

Speckled waterdog—(*Necturus beyeri* Viosca); flowing streams, east and west Louisiana.

Louisiana waterdog—(*Necturus louisianensis* Viosca); flowing streams, central Louisiana.

Two-legged eel—(*Siren intermedia* Le Conte); swamps and lakes.

Spotted salamander—(*Ambystoma maculatum* Shaw); temporary upland pools.

Marbled salamander—(*Ambystoma opacum* Gravenhorst); small stream valleys.

Mole salamander—(*Ambystoma talpoideum* Holbrook); small stream valleys.

Smallmouth salamander—(*Ambystoma texanum* Matthes); alluvial bottom lands.

Water lizard—(*Diemictylus viridescens louisianensis* Wolterstorff); ponds and swamps.

Two-toed blind eel—(*Amphiuma means* Garden); swamps and lowlands, Florida parishes.

Dusky salamander—(*Desmognathus fuscus* Green); damp woodlands.

Slimy salamander—(*Plethodon glutinosus* Green); rotten logs in uplands.

Four-toed salamander—(*Hemidactylium scutatum* Schlegel); upper Florida parishes.

Mud salamander—(*Pseudotriton montanus flavissimus* Hallowell); known only from springs, Washington parish.

Southern red salamander—(*Pseudotriton ruber voiscai* Bishop); small stream valleys, upper Florida parishes.

Two-lined salamander—(*Eurycea bislineata cirrigera* Green); damp places, Florida parishes.

Three-lined salamander—(*Eurycea longicauda guttolineata* Holbrook); damp places, Florida parishes.

Dwarf salamander—(*Manculus quadridigitatus* Holbrook); damp woodlands.

The rubber snake, sometimes called the ball snake, of the West is a small, heavy-bodied inoffensive reptile that actually does roll up into a ball when frightened. It feeds on small animals and is generally found in moist pine woods. It has a rubbery look in movement, hence its name.

TWENTY YEARS FOR FISHERY MARKET NEWS

The New Orleans Market News Service field office of the U. S. Bureau of Commercial Fisheries of the Department of the Interior marked its twentieth anniversary on January 5, 1960.

The daily Fishery Products Report published by this office covers shrimp, oysters, hard crabs, and fish landings in the Gulf Coastal Area in the states of Alabama, Mississippi, Louisiana, Texas, and the west coast of Florida. The daily Fishery Products Report, and monthly and annual summaries are sent free, by regular surface mail, to anyone interested in receiving them.

The report is used by the commercial fishing industry to keep abreast of daily shrimp landings by count sizes and species, ex-vessel and wholesale prices, cold storage movement and holdings, imports, canned pack, etc. It also covers oyster and hard crab landings and canned packs. Finfish landings are also included, in addition to coverage of the French Wholesale Fish Market in New Orleans. Fish meal, oil and solubles prices, market, and demand are also shown weekly for the entire United States.

The reports contain a wide variety of timely and valuable news articles regarding the commercial fishery industry including fishery trends and conditions in the United States and foreign countries, Congressional proceedings affecting fisheries, exploratory fishing by Government vessels, exports, foreign trade, new methods of processing fishery products, new methods of fishing, changes in fishing seasons and regulations, etc.

The reports are also sent to firms other than those connected directly with the fishing industry, such as banks, brokers, packaging firms, importers, exporters, libraries, hospitals, universities, public relations and industrial analyst firms, etc.

The New Orleans Fishery Products Report is one of seven daily reports, each with its own distinctive color, published in Market News Service offices located in important producing and distributing fishery centers of the United States.

ATCHAFALAYA JAMBALAYA

Add this to your piece, *New Ways to Fish—Be Noisy*. A dining-car conductor told me 25 years ago that he always shook out the dining-car tablecloths when the train crossed the Atchafalaya River in Louisiana. The engineer always blew the whistle as the train approached the bridge, and after a length of time the fish began to collect and leap out of the water when they heard the whistle. They'd then be waiting for the crumbs and scraps of food.

I suggested it wasn't the noise of the train that attracted them, but simply the fact they knew they'd be fed at a certain time. The dining-car conductor said it wasn't so, because many times the train would be late, but the same spectacle occurred.

The natives got on to it, and made their biggest catches at this time.

—James H. Milling.
Dallas, Tex.

WATER AND WILDLIFE

(Continued from Page 3)

ing areas, but it is distributed and controlled in such a way that public hunting places are becoming more limited each year.

4. Our estimates indicate that 100,000 licensed waterfowl hunters spend $17,000,000 annually in pursuit of their sport. This does not include any value for non-licensed hunters.
5. It has been suggested that an "army" of people enjoy observing and studying waterfowl and shorebirds in Louisiana. This esthetic value is certainly important, but we are unable to derive a satisfactory economic evaluation for this use.
6. In 1980, the demand will be increased markedly if increases in the past twenty-five years denote trends with reasonable accuracy.
7. Additional wetland acreage will be needed to sustain waterfowl hunting as it is known today, and we expect the flights of waterfowl to continue indefinitely.
8. Increase the value of low quality existing wetlands, which will be expensive.
9. Create an additional acreage of wetlands, possibly twenty per cent, to meet future demands.

Thus, in our opinion, these represent positive values to local, state, and national economies and to our general well-being for the pleasures afforded. Their requisite identity with water resources requires maximum, multi-purpose use and full consideration in any water control work.

A comparison of the data obtained through Louisiana's FW-1-R survey with that of the U. S. Fish and Wildlife Service, both of which were conducted about the same time, shows a marked difference in the average annual expenditures by sport fishermen and hunters. These data were as follows:

AVERAGE ANNUAL EXPENDITURES PER MAN

	Sport Fishermen	Hunters
Louisiana	$292.00	$115.00
National Average	92.00	80.00
Difference	$200.00	$ 35.00

In our opinion, these differences are attributed to the availability of greater annual opportunities in Louisiana. These contributions to our economy, affecting virtually every type of business, are needed and should be expanded.

Commercial aspects of fish and wildlife resources command a prominent interest in view of their dollar value to the economy; their provision of high quality foods, numerous fishery derived products including oil, meal, solubles, shell, etc.; and their provision of livelihoods for thousands of workers and their families. The total annual value of these resources derived chiefly from Louisiana's wetland areas including the freshwater streams, lakes, and swamps, the marshes, the estuarine inside waters and also the coastal Gulf waters is over $56,000,000. This value is based upon a three-to-five-year average net production which allows for a compensation of annual fluctuations due to natural causes or other factors.

The fresh and saltwater fishery produced over 32,000,000 pounds of marketable fish annually. This represents an approximate value of $4,500,000 to the fishermen.

A single marine fishery is based upon menhaden. Reduction of these fish provides oil, meal, fertilizer and fish solubles. The annual net value to the producers is about $6,500,000.

Oysters, oyster shells, and clam shells comprise another valuable segment of this commercial production. The average annual oyster harvest yields 750,000 barrels, which is extremely subject to environmental conditions. During good years, up to 1,000,000 barrels may be produced. Annual values to the oyster and shell industries appear to net $13,500,000 to the producers.

Major dollar values are attributed to the production of shrimp. In recent years, annual production has varied from a low of $10,000,000 to a high of $25,000,000 to the producers. However, the average value for the period 1956-58 was found to be $19,200,000.

Fur-bearers have contributed significantly to the Louisiana economy for many years. More recently, fur production has declined due to many factors; nevertheless, it is still a good cash crop. Nine species of fur-bearers, derived largely from the marshes, yield 2,300,000 pelts valued at $2,500,000 annually.

During the middle 1940's, a peak production and harvest of fur-bearers yielded about 13,000,000 pelts with a net value of about $13,000,000. The obvious difference in the above production values is attributed more to encroachments of several kinds by man which contributed greatly to ecological changes of marsh areas. Cyclic fluctuations of some animal populations may be pertinent to this in a minor way but, in our opinion, can in no way account for this vast difference.

Other associated commercial dollar values amount to $425,000 annually. These monies are derived from the sales of licenses and permits and also from the collection of severance taxes, which are required by law for engaging in the many phases of the above production groups.

Thus, in our opinion, the 1960 value of Louisiana's fish and wildlife, in the amount of approximately $180,000,000, merits equal consideration and is substantially on par with other interests associated with water resources. If we project this value to 1980 with the assumption that commercial production will remain status quo, then the value of the resources will be $294,775,000. However, demands for increased commercial production can be expected to increase with the population and their value should be revised upwards.

In our opinion, there is no surplus of these products, sportwise or commercial-wise, for difficulties are experienced in meeting present needs in certain areas.

Geographically, Louisiana serves as the gateway to the entire Mississippi Valley, a broad expanse constituting the major basin and watershed of this country. The Mississippi, Red, Pearl, and Sabine Rivers with their extensive tributary systems are interstate rivers which have contributed to and influenced the physiographic and ecological features of this state.

Historically, Louisiana has received the waters derived throughout the basins of these river systems and has been required to adapt its economy and livelihood to the water cycles as they occurred. The greatest deltaic system in this country, including almost five million acres of marshland, has developed along coastal Louisiana as a result of these forces.

The ecology of our wetlands, the bottomland swamps and marshes, is closely identified with, and largely predicated on, these water cycles. For example, the greatest natural production of game and commercial freshwater fishes, of which we are aware in this country, occurs in our backwater overflow areas. It almost goes without saying that this Red River backwater area enjoys an excellent sport fishing reputation among sportsmen of Louisiana and surrounding states.

Fishing success peaks generally occur immediately following high and prolonged overflow periods during the spring. Annual flooding of streams and overflow areas throughout the state contributes to the successful spawning and propagation of our fishes by providing fresh water, more space, more food, and waters of increased fertility including necessary organic and inorganic substances.

Before the advent of levees along the major and minor streams throughout coastal Louisiana, this annual flooding distributed these waters and nutrients as well as sediments in the bottomland swamps, marshes, and primary deltaic areas while enroute to the Gulf. These forces established and maintained the extensive hardwood swamps and brackish water estuarine coastal marsh areas. These areas have been richly productive of fur-bearers, waterfowl, other wildlife forms, shrimp, oysters, food and commercial fishes, and other important aquatic animals. Yet, more striking and more economically intangible is the fact that these estuarine areas serve as the nursery grounds for many of the marine animals harvested at sea.

An analysis and comparison of fisheries' productivity with other areas indicates that the major difference between the marine waters of Louisiana and those of other states is the combination of its volumes of freshwater and the extensive estuarine areas. Since the levees have been established, almost to the mouths of streams, the continual building of the marshes has essentially ceased due to the absence of overflow over natural streambank levees. No doubt, subsidence (compaction and settling of materials) of the marshes will be more evident in the future. Fortunately, coastal and tidal currents have carried some of the fresh, high nutrient waters into estuarine areas which has helped maintain generally good conditions and productivity, especially during periods of high river discharge.

Louisiana's population of over three million is increasing well within limits of the national average. Presently, major portions of this population are centered in such major areas as New Orleans, Baton Rouge, Lafayette, Lake Charles, Alexandria, Monroe, and Shreveport. Recognizing some of the various factors which stimulate and contribute to population increases, it appears to us that these areas will continue to increase, possibly even more rapidly. Recent developments along the Mississippi River from below New Orleans to Baton Rouge suggest a future complex of intensive development with an associated greatly increased population.

Today, it can be stated conservatively that most of the water areas of the state, of which there are many, are receiving heavy use if they afford reasonable fishing and or hunting success. Even so, some will be able to provide much greater use in subsequent years as demand for the less accessible areas develops. Presently, major and minor streams of several types are providing many opportunities for fishing, ranging from rigorous float trips on the creeks to the more casual trips on the slow moving bayous and open rivers to excellent backwater area fishing. Lakes, such as old river oxbows, reservoirs, and farm ponds are also providing many fishing opportunities.

In our opinion, farm ponds will help contribute to the provision of opportunities, but for the most part are private and will not substantially provide public opportunities. Along the coast, estuarine areas including lakes, bays, and bayous are particularly attractive, and will continue to afford tremendous fishing opportunities in the future. Offshore fishing is continuing to increase in popularity and will contribute much to the provision of opportunity. In respect to these areas of opportunity, it relates for the most part to both the sport and commercial fisheries.

Reference is now made to existing hunting opportunities. Public facilities are limited today, in general, and the outlook is not bright. This situation is particularly critical in most of the previously designated highly populated areas of the state, and more so in coastal Louisiana where public use is becoming quite restricted. The majority of people, represented by elected and appointed officials at all levels of government, are comprised of the average and little man, economically speaking. These people also comprise the average hunters who are rapidly becoming "the have nots" with respect to hunting areas. We believe that meeting these needs is a state function except where federal lands and waters are available; in these situations, we believe that such lands should be made available to the public, either through the state or directly, to facilitate the meeting of current needs.

Our department proposes to augment its activities in the acquisition of areas for fish and wildlife and subsequent public use, provided the sportsmen are interested in investing for the future through increased license fees. This seems feasible, and we are optimistic, for recently Congress was well supported in its increase of the Duck Stamp fee so as to save and provide important waterfowl areas in this country.

A few years ago, it was thought that man's activities could change and influence only the inland and estuarine water areas. Now, even this is no longer true for we exercise some concern about the influence of radioactive materials in the Gulf of Mexico and other marine waters. Many fish (species and populations) are migrant and are not limited just to Louisiana waters. Their relationships to the web of life of the sea suggest many pertinent questions about the dispersal of such materials and the subsequent uptake and concentration in food forms used by man.

The recognition of present uses of water resources in the fish and wildlife field of interest emphasizes today specific needs with respect to certain populated areas, and especially so if variety of opportunity is considered. This factor of the individual's interest in all phases of life and its recognition by others has served as the bulwark of strength in the history of our country. The recognition by Congress of the need for the conservation and wise use of water and allied resources impresses upon us the need for this recognition among all interests. More particular, this would suggest that an end is in sight for our national "Progress by Natural Resources Destruction" era.

Several of the major needs today are quite obvious. Foremost among these is the provision of public access to public lands and waters for fishing, hunting, and a multitude of other recreational activities. This is clearly recognized as local, state, federal, or joint responsibilities, depending entirely on the specific area. Considerable sums of money have been expended on all types of water projects in Louisiana in the public interest with amazing short-sightedness as related to multi-purpose uses. These facilities have been constructed with public tax monies and little or no provision has been made to assure public access and use in perpetuity or for the life of the project. As a federal example, the Atchafalaya Floodway can be cited. Flowage and flooding easements representing suggested levels of seventy-five to one-hundred per cent of the fee simple value of the land were purchased to meet the flood needs. For comparatively little more, the land itself could have been purchased which would have minimized future problems. Additional submarginal agricultural and other developments within the floodway would have been prevented so that the primary purpose of the original purchases could be served always without the possibility of future flood damage payments. A complimentary feature, non-conflicting in purpose, would have been the availability of the area to the public for fish, wildlife and other recreational purposes. On the other hand, the Bodcau Flood Control Reservoir lands were acquired in title and are now serving their primary purpose, while non-conflicting fish, wildlife and other recreational developments are proceeding in an orderly manner. This is and will be a credit to the federal and state agencies. Similar state examples could be cited also. These above cited federal examples will serve as guides and should impress high level local, state, and federal elected and appointed officials with the need for policy changes to provide for public access and use of facilities constructed and developed with public funds.

Additional facilities associated with water resources are needed today to meet the needs of the people in the more populated areas. These include access to public areas, impoundments, and hunting areas. Many of the areas available in the past, especially in the marshes, are becoming posted and are no longer available to the public hunter. Today's trends suggest that the "open range" concept for cattle as well as people is rapidly changing. For example, a nine per cent reduction in hunting license sales from 1957 to 1958 means to us that there were just fewer areas available to the hunting public since there were no apparent comparable fluctuations in game populations. The same principle is also applicable to many fishing areas. Ecological changes, as a result of various works, has reduced the quality of many such fish and wildlife areas.

Fresh water from streams is needed in the marshes. Recognizing the various developments adjacent to major streams makes it impractical to eliminate existing levees. However, a positive approach to meet these present needs is the installation of control structures in the levees to permit gravity flow of water as needed and, more particular, in volumes needed. This management practice would reduce salt-water intrusion, increase the fertility of estuarine waters and replenish mineral sediments, thus overcoming some of the subsidence in these areas. Benefits can be expected to aquatic animals, such as oysters, shrimp, crabs, fishes and other food chain organisms of the sea, waterfowl, shorebirds, and fur-bearers. Among these are animals of high economic importance and others are of esthetic, scientific, or life cycle importance to the ecology of the area. It is conceivable that, in time, estuarine fisheries production may be actually managed and in part controlled by regulated fresh-water introduction. The value of such increased seafood production could be invaluable when the tremendous food requirements of predicted expanding human populations is considered.

Perhaps one need of foremost importance today is that of proper management of existing and proposed additional facilities which are desirable to meet current needs. Progress is being made in this area of our social structure, although it is slow. It is recognized that this is primarily an educational problem and efforts in this direction are limited to the past twenty to forty years or even more recently, for the tools of knowledge previously were unavailable. Reasonable discouragement become diminished when cognizance is taken of the grass roots approach to agricultural problems and practices by the federal and state governments with the able support of many trained workers and unknown sums of money over a long period of time. This lends support to the desire and hope that this problem in the fish and wildlife field can be reduced or solved within a reasonable period of time.

The keynote of problems associated with water resources in fish and wildlife resource fields today can be stated simply as the preponderance of "drastic ecological changes". This causes deep concern among technically trained personnel and some few sportsmen, commercial fishermen, and trappers, who have recognized and developed an appreciation for these situations. The evidence of many local, state, and federal water control projects in Louisiana suggests "single purpose" approaches of the past and present, with some exceptions, as being inadequate for the best public interest when reviewed critically by fish and wildlife specialists. Examples of such inadequacies will be found among projects for flood control, drainage, navigation, and fish and wildlife. Failure to include provisions for maximum or multi-purpose uses including fish and wildlife in the best public interest resulted because of several reasons. These appear to be subject to grouping as follows:

1. Lack of foresight . . . who could or was capable of predicting years ahead what the situation would be today since vast opportunities existed at that time.
2. Unawareness . . . few people, if any, were equipped with the tools of knowledge to be able to plan intelligently for the future.
3. Lack of information in all groups . . . quite likely, the primary project purpose masked other equally important considerations while heroes were made because "they did something" while other interests failed to participate.
4. Competition for funds . . . it would appear that less costly and less complicated single-purpose projects would compete more favorably on an area or national basis, whereas, multi-purpose projects cost more; perhaps of greater importance is the fact that the single-purpose supporting citizen groups objected to the additional cost since the project might be delayed or considered to be too costly by the governmental body authorizing and appropriating public monies for the various projects.

Regardless of the factors which may have contributed to these situations, we would like to acknowledge them for the primary purpose of progressing by these experiences. Let these previous activities suggest, describe, and define procedures for avoiding and preventing any losses of fish and wildlife resources in the future.

Among present day problems is the reduction of fish and wildlife habitat as a result of various other private developments associated with water resources. Notably in the marsh and estuarine areas which are readily subject to a variety of forces including tides, winds, currents, variable salinities and temperatures, developments such as pipelines, channels for oil rig barges, and pollution, cause extensive damage to the animals and their habitat. These influences resulting from dredging, drilling, and industrial production activities are particularly obvious on oysters, natural oyster reefs and oyster-beds. Documented examples include the following: oily-tasting oysters; cut-off oyster beds in arms of small bays and bayous; the loss of beds due to siltation resulting from a change in currents caused by spoil banks whereby heavy silt laden waters drop their load, thus smothering the oyster beds; and the actual physical loss of oyster beds or natural reefs due to dredging of channels or spoil placement. The extent of these damages and losses becomes accentuated with the recognition of the fact that there are but fifty to sixty thousand acres of water bottom under private leases for oyster culture out of approximately two and one-half to three million acres of available water bottoms. If there were more good bottoms that met the life history requirements of the oyster, it would be leased also. The influence of these factors on many other aquatic and terrestrial plants and animals in estuarine areas is not fully known; however, it is not generally beneficial. The pertinence of these matters lies in the fact that such permits for these developments are governed primarily by the corps, though limited to navigational objections.

There has been a failure to adequately consider all interests while apparently favoring a single interest. Fortunately, more recent evidence lends encouragement that previous practices will yield and give rise to the more reasonable evaluation and inclusion of provisions for the overall public needs in the water resources field. Since the purpose of these public hearings is to delineate and define water resource problems at the present time and anticipated future ones, it is deemed necessary that representative problems in the various fields of public works be described as examples for consideration in the establishment of future policies, laws and practices at high local, state and national levels of government.

For convenience, these examples are grouped as follows:

1. Flood control—The construction of the Bayou Lafourche canal, primarily in Morehouse, Ouachita and Richland parishes, provided drainage to submarginal areas, changed water cycles within the area causing some areas to go under water which had not been known to flood, resulted in the drainage of adjacent hardwood swamps causing some die-offs during drouth years, and reduced a high quality sport and commercial fish and wildlife area. Fur records suggest that the total annual reduction in value was from $379,416.00 to $38,548.00, while commercial fish, values, quite incomplete, suggest an annual reduction from $4,600.00 to $90.00 per commercial fisherman which numbered about four hundred (400) in 1952.
2. Levees—These structures in conjunction with other measures have reduced, if not eliminated, flood hazards along the Mississippi River, in Louisiana, which has permitted extensive developments of many kinds. However, old crevasses or distributaries were permanently closed, such as Bayou Lafourche in Ascension, Assumption, and Lafourche Parishes. Subsequently, when the need for additional freshwater became critical for domestic, industrial and other purposes, it was necessary to install costly pumps to help meet these needs.

   The extension of levees to the active deltaic areas of the Mississippi and Atchafalaya Rivers in recent years has effectively terminated the deposition of silt in and build up of adjacent marsh areas. This development has also altered the ecology of marsh and adjacent estuarine areas for distances up to thirty miles by permitting salt-water intrusion of brackish water areas. More noticeable effects occurred among the oysters and furbearers in brief periods following the completion of the levees.
3. Drainage—Many submarginal areas have been drained in the interest of agriculture, residential, industrial, etc., developments. This has resulted in an unnecessary lowering of water levels of lakes and bayous, as well as a lowering of the surface water table of higher elevation farm and forest lands. Subsequent evidence associated with some such projects would suggest that some of these projects were ill-advised.

   The re-routing, diversion, and reduction of floodwater periods appears to have contributed to and augmented aquatic weed problems. An absence of highly turbid waters through much of the internal drainage for reasonable periods of four to six weeks has encouraged the growth and distribution of these pests, since the swamp or drainage waters remain clear much of the time.
4. Navigation—The development of many navigation canals and channels has resulted in substantial changes to the ecology of many areas, especially coastal Louisiana. The Calcasieu Ship Channel has resulted in salt-water intrusion that has and is eliminating highly desirable marsh vegetation which is being replaced by low quality grasses. The Intercoastal Waterway has served to intercept natural drainage and divert waters along different patterns, thus upsetting the existing regimen. Recognition of many of these relationships has required a number of years. Other projects such as the Mississippi River-Gulf Outlet and Barataria Bay Waterway are expected to alter the existing water, currents, salinity, etc. regimen considerably in project areas which may extend further than the project site itself.
5. Recreation—The operation of some major impoundments constructed primarily for fish and wildlife could have been planned and managed, to assist with local watershed flood control problems. Infrequently, if ever, has this been an alternate consideration.

In the past few years, there has been inadequate time, funds, or trained fish and wildlife technical personnel to adequately study the many proposed and surveyed projects. Even though the fish and wildlife state and federal groups have endeavored to study, evaluate, and offer recommendations pertinent to these resources for most projects, it has been impossible for the above reasons to deal with them adequately or even in a manner comparable with the engineering surveys. Accordingly, this has contributed to the less than satisfactory treatment in many instances by the various authority levels of government. In a similar manner, there have been failures to accept recommendations for fish and wildlife features since these would require modifications in engineering plans and increases in project costs. In our opinion, these revisions were entirely justified.

Inspection and consideration of past and present factors describe future trends which emphasize increased needs for water resources in all fields. These include fish and wildlife, industry, power, navigation, agriculture and possibly other major and minor interests not yet established.

There can be little doubt that the vast majority of past, present and pending water control projects were considered a necessity by the people who asked for them. While we have been critical of many of the past authorized projects, it has not been intended to imply that these projects should not have been constructed, but rather that much of the damage to fish and wildlife resources could have been prevented with proper foresight, planning and coordination of effort. In the opinion of most technically trained conservationists, gross and cumulative changes in the ecology of the state occur as a result of man's effort to occupy submarginal environments. These technical people are concerned with the fact that such changes are occurring which affect most of the renewable natural resources, and, more particularly, that over a period of twenty-five to fifty years these changes may be irreversible for many of these resources. Thus, in our opinion, these factors emphasize the need for, as well as require careful, comprehensive multi-purpose considerations by all interests in approaching water resource problems.

In regard to future quantities needed, it is our opinion that all the surface and ground waters presently available plus more will be required to meet future needs for fish, wildlife, and other interests. We question whether present uses and practices as found in the water field will permit or sustain present and particularly future needs since having adequate quantities at the right time and place creates problems.

Categories of "Quantity" and "Quality" problems which merit consideration by all interests are as follows:

1. Insure minimal flows.
2. Compare influence of irrigation with respect to all interests.
3. Consider seasonal needs with respect to altering existing regimen of waters.
4. Water control and management of estuarine areas as a means of meeting increasing seafood needs of rising population levels.
5. Confining alkali and other salts in area of origin, or controlling their disposition.
6. Watershed control of silt.
7. Control of organic, industrial, and radioactive wastes, and domestic sewage.
8. Control of year-round turbidity levels resulting from dredging, gravel operations, etc.
9. Secure adequately trained personnel representative of all interests with ability to understand the overall concept of water resources management to plan and implement water resource development and management programs.

RECOMMENDATIONS

1. Complete implementation of Coordination Act as amended to provide for the realistic approach to water resources management.
2. Recognition of the fact that every effort must be made to eliminate any waste of water resources by officials at all levels of government and also by private interests.
3. Provision of adequate time and funds for coordination and studies by fish and wildlife technicians and other interests concurrently with engineering planning groups from the inception of all proposed projects.
4. Recognition that a major problem is the reduction of fish and wildlife habitat as a result of other water developments and the establishment of firm policies to provide for these needs.
5. Allocation of suitable lands and waters for fish, wildlife and other recreational uses in connection with water resource developments by the inclusion of fish and wildlife as one of the primary functions, even if enhancement is involved.
6. Federal projects costs to include fish and wildlife developments as allied or associated project costs. States share cost by assuming responsibility for operation and maintenance of such developments.
7. Provision by acquisition of adequate public lands associated with water resource developments for public use.

This string of 45 choupique (bowfin) were caught in the vicinity of Bayou Chevreuil, Lafourche parish, by (left to right) Stanley Morvant, Jr., Earl R. Bergeron, George L. Pitre, and Bruce Ellis. Mr. Bergeron and Mr. Pitre are teachers at Thibodaux Jr. High School. These choupique, caught with heavy duty tackle, weighed up to eight pounds.

CORRECTION

Through error in the story "The Big GMA Pay Off" in the December, 1959 issue of the *Conservationist,* the Louisiana Wild Life & Fisheries Commission was credited with a phase of an operation which was in no way justified.

With reference to the deer hunt on the Chicago Mill Game Management Area in Tensas Parish, this article stated: "Game Management biologists attributed the heavy kill for the first days of this December's hunt to the fact that the area is more accessible to hunters than last season because the Commission has had time to build access roads through the Chicago Mill Area".

The facts are simply that the Louisiana Wild Life & Fisheries Commission did not construct these roads. The Chicago Mill and Lumber Company built all of the present roads on this area in connection with their oil and timber operations on this land which they own. The roads are not "public" roads in any sense of the word.

It was only through the splendid cooperation of the Chicago Mill and Lumber Company that hunters were allowed to use the roads during the hunt on the management area.

Many appreciative comments have been received from hunters who used the road system and the credit for this highly favorable reaction should be directed to Chicago Mill and Lumber Company. The deer hunt on this area could not have been nearly as successful as it was without this privilege, according to representatives of the Wild Life and Fisheries Commission who carried out this program.

THE PHANTOM BUCK

Come all deer hunters and gang around,
Unload your guns and lay them down.
Light up a cigarette or take a chew,
For I have a tale to tell to you.

I was on my stand at the break of day,
Just a couple of miles from the Reserve of West Bay.
I had scouted the woods the previous day,
And a trail indicated deer passed that way.

I sat on a log my back against a tree,
The forest was as quiet as the open sea.
I sat and I waited and finally, lo!
A movement in the bushes, it was a doe.

She looked straight at me and wiggled her tail,
Then moved very slowly on down the trail.
My nerves were tense and I said in my mind,
"Surely a big buck will follow behind."

I waited and waited and I don't know why,
But the buck I expected did not come by.
He might have learned a long time ago,
That it was dangerous to follow a doe.

Some time later with my gun across my knees,
Behind me I heard a noise in the dry leaves.
I sat motionless as I gripped my gun,
And to my dismay it was a doe on the run.

She passed right my me with her head held high,
I could have touched her with my gun as she went by.
I became discouraged and I couldn't help but say,
"I wonder where all the bucks are today."

Now fellows that's my story and it is true,
I hope this same thing never happens to you,
But if it does just smile and say,
"All right old buck, I'll be back another day."

Now deer are smart creatures I will admit,
But because I've never killed one, I'm not going to quit.
So, next hunting season on opening day,
I'll be back on that log, hope a buck passes my way.

—D. A. Dean

TAKE A LESSON

Last week a careless rabbit hunter climbed through the fence with his gun cocked. He is survived by his wife, three children and one rabbit.

Louisiana Hunting Seasons 1959-1960

Resident Game Birds and Animals
Shooting Hours—One Half Hour Before Sunrise to Sunset.

BOB-WHITE (quail or partridge): November 26-February 15, inclusive. Daily bag limit 10, possession limit 20.

WILD TURKEY: To be set by January 1960. Framework: March 1-April 30.

SQUIRRELS: October 17-January 10, inclusive. Daily bag limit 6, possession limit 12.

BEAR: Closed Season.

DEER: 7 to 58 days, depending upon the area, from November 14 through January 10. Obtain pamphlet for Map and details.

A. Bag: 1 legal deer per day; 2 legal deer per season.

B. Legal bucks defined as those deer having antlers (spikes) of 3 inches or more in length, and will be the only legal deer except as otherwise specifically provided for in specific areas.

C. Any deer are defined as all deer with the specific exception of spotted fawns, which are protected.

D. Still Hunting Only prohibits the use of dogs for hunting deer in areas so designated, including Game Management or Refuge areas except where specifically permitted. In all other areas, deer hunting will be permitted with or without the use of dogs.

COMMERCIAL HUNTING PRESERVES: October 1-March 31. Pen raised quail only.

GAME MANAGEMENT AREAS: Obtain pamphlet for schedule.

Migratory Regulations

DOVES: September 5-September 20, inclusive, and November 26-January 13, inclusive. DAILY BAG LIMIT 10, POSSESSION LIMIT 20. Afternoon shooting only.

DUCKS: November 26-January 4, inclusive. DAILY BAG LIMIT 4, POSSESSION LIMIT 8. Only one canvasback, or one redhead, or one ruddy duck may be included in a bag or possession limit. One wood duck and one hooded merganser may be included in a bag or possession limit. Red breasted and/or American mergansers, daily bag limit 5, possession 10, in addition to other duck limits.

GEESE: October 31-January 8, inclusive. DAILY BAG AND POSSESSION LIMIT: 5, including in such limit not more than two Canada geese (or its subspecies) or two white-fronted geese (speckled-bellies), or one of each.

COOTS: (Poule-d'Eau): November 26-January 4, inclusive. Daily Bag Limit 4. Possession Limit 8.

RAILS and GALLINULES: October 3-November 21, inclusive. Daily bag and possession limit 15.

SNIPE (Wilson's or Jack Snipe): December 5-January 3, inclusive. Bag and Possession limit 8.

WOODCOCK: December 7-January 15, inclusive. Bag limit 4, possession limit 8.

SHOOTING HOURS:

(1) Ducks and Coots: Sunrise to sunset except opening day which will be 12:00 noon.

(2) Geese and Snipe: Sunrise to sunset.

(3) Doves: 12:00 noon to sunset.

(4) Rails, Gallinules and Woodcock: One half hour before sunrise to sunset.

Use of bait and live decoys prohibited. Hunters of ducks and geese who have reached their 16th birthday must have a federal waterfowl stamp attached to required state hunting license or permit. A federal waterfowl stamp may be obtained from any U. S. Postoffice. Use of rifles, or shotguns larger than 10 gauge or capable of holding more than three shells prohibited. The plug used in guns must be incapable of being removed without disassembling gun. Legal possession limits of game birds or game animals may be possessed up to within 30 days of the opening of the following season.

Licenses

HUNTING LICENSE, RESIDENT.................$1.00
(Required of all residents who have reached their 16th birthday. Residents 60 or over must possess free permits obtainable at Sheriff's office.)

HUNTING LICENSE, NON-RESIDENT (Required of all non-residents, except those under 16 years of age.) RECIPROCAL WITH OTHER STATES.

HUNTING LICENSE, NON-RESIDENT (COMMERCIAL HUNTING PRESERVE ONLY—4 DAY TRIP).................$5.00
(Licenses issued at preserve only. Not required in addition to reciprocal license.)

MILITARY PERSONNEL on Active Duty are exempt from the purchase of Louisiana hunting and angling licenses.

HUNTING CLUB LICENSE.................$ 5.00

COMMERCIAL HUNTING PRESERVE LICENSE.................$200.00

TRAPPING LICENSE.................$ 2.00
Trapping seasons to be announced. Only residents permitted to trap.)

FUR BUYER, RESIDENT.................$ 25.00

FUR BUYER, NON-RESIDENT.................$100.00

FUR DEALER, RESIDENT (Deposit $500.00 required).................$150.00

FUR DEALER, NON-RESIDENT (Deposit $1000.00 required).................$300.00

(REPORT ALL VIOLATIONS TO YOUR NEAREST WILD LIFE AGENT)

End Of The Line For A Louisiana Whitetail

—photo by Dick Yancey